

## **Remarks**

### **I. Introduction**

This is in response to the Office Action dated October 25, 2006. The Office Action rejected claims 1, 2, 5-8, 11, 13, 19, 22, 25, 26, 29, 30, 38, 40, and 41 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,891,866 ("Robinson"). The Office Action objected to claims 3-4, 9-10, 12, 20-21, 23-24, 27, 31-32 and 39 as being dependent upon a rejected base claim. The Office Action indicated that claims 3-4, 9-10, 12, 20-21, 23-24, 27, 31-32 and 39 would be allowable if rewritten in independent format including all of the limitations of the base claim and any intervening claims. Applicants appreciate the recognition of allowable subject matter. Claims 1-32 and 38-41 remain for consideration.

### **II. Rejection - 35 U.S.C. § 103(a)**

Claims 1, 2, 5-8, 11, 13, 19, 22, 25, 26, 29, 30, 38, 40, and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Robinson. Applicants traverse this rejection.

In order to show a prima facie case of obviousness under 35 U.S.C. § 103(a), there must be a showing of some suggestion to combine or modify one or more prior art references in a manner which would show or suggest the claimed invention. In the present case, the Examiner has rejected the claims as obvious over a single reference. A suggestion to modify may flow from the prior art reference itself, the knowledge of one of ordinary skill in the art, or the nature of the problem to be solved. Pro-Mold and Tool Co. v. Great Lakes Plastics Inc., 37 U.S.P.Q.2d 1626, 1630 (Fed. Cir. 1996). However, the fact that the suggestion to modify may come from the knowledge of one of ordinary skill in the art or the nature of the problem to be solved does not diminish *the requirement for actual evidence*. The requirement of specific evidence is an essential evidentiary component of an obviousness holding, without which a finding of obviousness cannot stand. C.C. Bard Inc. v. M3 systems Inc., 48 U.S.P.Q.2d 1225, 1232 (Fed. Cir. 1998), *rehearing denied*, 49 U.S.P.Q.2d 1319 (1998), *cert. denied*, 526

U.S. 1130 (1999). Mere conclusory statements made by an Examiner are not sufficient evidence to support an obviousness rejection. See, In re Sichert, 196 U.S.P.Q. 209, 217 (C.C.P.A. 1977). Further, the modification cannot change the principle of operation of the reference and cannot render the prior art unsatisfactory for its intended purpose. See MPEP 2143.01.

Applicants respectfully submit Robinson does not teach or suggest all claim features of Applicants' invention and further does not provide a motivation for modification to achieve the features of Applicants' invention. Though the present Office Action states such a modification is within the ordinary skill in the art, no evidence is presented of such and no suggestion for such a modification, either express or implied, is found in Robinson. Accordingly, the rejection under 35 U.S.C. § 103(a) is improper and should be withdrawn.

Specifically, Applicants claim in independent claim 1:

an optical midpoint controller couplable to the photodetector and couplable to the semiconductor laser, the optical midpoint controller, in response to the photodetector current, adjusting a forward bias current of the semiconductor laser, so that the semiconductor laser generates the optical signal with a power level approximate to a-predetermined optical midpoint power level, said predetermined optical midpoint power level determined by calculating an arithmetic mean of a plurality of optical power levels.

Similar features are present in independent claims 22, 38, and 40. Specifically, claim 22 claims, in part:

determining a measured optical midpoint power level as an arithmetic mean of the detected first optical power level and the detected second optical power level;

claim 38 claims, in part:

the forward bias current controller capable of determining a measured optical midpoint power level as an arithmetic mean of the first photodetector current indicator and the second photodetector current indicator;

and claim 40 claims, in part:

the predetermined optical midpoint power level being determined by calculating an average power level from a plurality of optical power levels.

Accordingly, independent claims 1, 22, 38, and 40 each claim determining an optical midpoint power level by calculating an arithmetic mean of a plurality of optical power levels/current indicators.

In contrast, Robinson teaches a method for determining a condition of a laser system by determining a change in laser current from an initial value. The transmitted power is measured by generating a first control signal that sets a magnitude of a bias current that is supplied to a laser. Then, a second control signal is generated that sets a modulation current supplied to the laser. A difference between the high and low transmitted powers is then detected. This difference represents an optical modulation amplitude of the bias and modulation currents.

The current Office Action concedes "Robinson does not teach the level to be determined as an arithmetic mean of a plurality of values." See, Office Action, Page 4, lines 5-6. The Office Action then suggests it would have been obvious for one of ordinary skill in the art to "eliminate an entire set ( $I_{bias} + I_{mod}/2$ ) of measurements from Robinson's method" (Office Action, Page 4, lines 7-8) and "compute the optical midpoint value from the mean of measured A and B values" (Office Action, Page 4, lines 10-11). Applicants respectfully submit there is no suggestion or motivation to make such a modification and the discussion thereof in the most recent Office Action is improper hindsight reconstruction of Applicants' claims. Further, Applicants submit the modification of Robinson proposed in the current Office Action renders the reference unsuitable for its intended use.

Robinson does not discuss "calculating an arithmetic mean of a plurality of optical power levels" as claimed in independent claim 1 and similarly in independent claims 22, 38, and 40. The Office Action suggests modifying Robinson to calculate this value by eliminating an entire set of measurements, indicating one of ordinary skill in the art would do this to free up operational time, increase efficiency, and enable a controller to compute the value. See Office

Action, Page 4, lines 7-12. However, Robinson does not teach or suggest a need for, the desirability of, or any motivation for freeing operational time, increasing efficiency, or using the controller for any other purpose.

Additionally, the Office Action does not provide evidence of a motivation to alter the reference as presented in the present Office Action. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so. Simply stating that one of ordinary skill in the art *could* make such a modification is insufficient. The Office Action does not provide, and Robinson does not contain, a suggestion or motivation to modify the teachings therein to achieve Applicants' claimed invention. No additional art has been cited which presents the evidence which Robinson and the Office Action lack. Accordingly, Applicants respectfully submit the Office Action fails to make a prima facie case of obviousness and the rejection under 35 U.S.C. § 103(a) is improper and should be withdrawn.

Further, eliminating the measurement as the Office Action suggests renders Robinson unsuitable for its intended purpose. Robinson, in FIG. 4 and the associated discussion, teaches a method for determining degradation or malfunction of a laser diode. This method is accomplished by determining a difference between in initial value of current  $I_{avg}$  and a present value of  $I_{avg}$ . See Robinson, Col. 4, lines 45-63. It is noted that the present  $I_{avg} = I_{bias} + I_{mod}/2$  and is the measurement the Office Action suggests eliminating. Without the measured  $I_{avg}$ , Robinson has no comparison values and thus cannot determine degradation or malfunction of the laser diode – an intended purpose. Accordingly, as the modification is not only not suggested but is undesirable considering Robinson as a whole, Applicant respectfully submits one of ordinary skill in the art would not be motivated to make the modification the Office Action suggests.

Accordingly, for the foregoing reasons, Robinson does not teach or suggest the element of determining an optical midpoint power level by calculating an arithmetic mean of a plurality of optical power levels/current indicators, as is claimed in independent claims 1, 22, 38, and 40. Thus, Robinson does not teach

all elements of these claims and, as a result, claims 1, 22, 38, and 40 are allowable.

It follows that claims 2-13 and 19-21 (dependent upon claim 1); claims 23-32 (dependent upon claim 22); claim 39 (dependent upon claim 38); and claim 41 (dependent upon claim 40) are allowable at least for the reason that they are dependent upon an allowable base claim.

At least claim 19 claims additional allowable subject matter. Specifically, claim 19 claims, in part:

an extinction ratio controller couplable to the photodetector and coupled to the modulator, the extinction ratio controller, in response to the photodetector current, capable of adjusting the modulation current provided by the modulator to the semiconductor laser to generate the optical signal having substantially a predetermined extinction ratio.

The Office Action states that column 7, line 20 – column 8, line 10 of Robinson teaches that an “extinction ratio (is) measured and recorded” and that “the  $I_{mod}$  and  $I_{bias}$  can be adjusted to a desired power settings (sic) for extinction ratio or otherwise” and that column 7, lines 8-14 and 64-67 teach that the “power (may be) adjusted to match predetermined value (sic) stored in memory.” The Office Action concedes “Robinson does not teach adjusting the power levels to correspond to a predetermined extinction ratio” (Office Action, Page 7, lines 1-2) but that one of ordinary skill in the art would “combine Robinson's taught power level ( $I_{bias}$  current) adjustment with the predetermined extinction ratios in lookup tables... which would allow for signal clarity from the transmitting device” (Office Action, Page 7, lines 3-7).

As above, Applicants respectfully submit there is no motivation to modify Robinson as the Examiner has suggested. Specifically, Robinson does not discuss a need for improving signal clarity nor any issues with transmission. Absent such a suggestion, Applicants submit Robinson simply uses “values of currents  $I_{bias}$  and  $I_{mod}$  that produce the desired transmitted powers,” not a “modulation current provided by the modulator to the semiconductor laser to

generate the optical signal having substantially a predetermined *extinction ratio*" (emphasis added), as claimed in Applicants' claim 19.

These teachings of Robinson are clearly different than the element of claim 19 cited above. In particular, this passage of Robinson only teaches calculating an extinction ratio and storing that ratio, which is known in the art. This passage of Robinson does not teach adjusting modulation current provided to the laser to generate an optical signal having a predetermined extinction ratio, as is claimed in claim 19.

Accordingly, for the foregoing reasons, Robinson does not teach or suggest all elements of claim 19 and, therefore, claim 19 is allowable for this additional reason.

### **III. Updated Correspondence Address**

Applicants note that the October 25, 2006 Office Action was mailed to Customer Number 34756 at the following address:

Gamburd Law Group  
566 West Adams  
Suite 350  
Chicago, IL 60661

However, a Power of Attorney and Change of Correspondence Address letter, a copy of which is hereby attached, was previously filed on September 30, 2005 and a copy of the same was filed with Applicants' Amendment on August 11, 2006. Applicants request that the file for the present application be updated accordingly with the new Correspondence Address associated with Customer Number 42292.

**IV. Conclusion**

For the foregoing reasons, all pending claims are allowable over the cited art. Reconsideration and allowance of all claims is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Donald E. Marshall', is written over a horizontal line.

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Date: February 20, 2007  
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